

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Q.2 1. **(Currently Amended)** An imaging apparatus comprising:
a taking lens for forming an image of a subject on an imaging surface;
an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, each group composed of combinations of lines spaced at specific intervals and at least partially interleaved with lines of another group, and which stores the charges corresponding to the image of the subject formed by said taking lens on the imaging surface;

control means for controlling the charge storage start timing for said imaging device in such a manner that the photoelectric conversion elements belonging to the same photoelectric conversion element group in said imaging device start to store charges with the same timing and the photoelectric conversion elements belonging to another photoelectric conversion element group start to store charges with different timing; and

driving means for driving said taking lens along the optical axis on the basis of the image signal read from each of the photoelectric conversion element groups in said imaging device.

2. **(Currently Amended)** An imaging apparatus comprising:
a taking lens for forming an image of a subject on an imaging surface;
an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, composed of combinations of lines spaced at specific intervals, and which stores the charges corresponding to the image of the subject formed by said taking lens on the imaging surface;

control means for controlling the charge storage start timing for said imaging device in such a manner that the photoelectric conversion elements belonging to the same photoelectric conversion element group in said imaging device start to store charges with the same timing and the photoelectric conversion elements belonging to another photoelectric conversion element group start to store charges with different timing; and

driving means for driving said taking lens along the optical axis on the basis of the image signal read from each of the photoelectric conversion element groups in said imaging device. The imaging apparatus according to claim 1,

wherein said driving means drives said taking lens to specific positions in synchronization with the charge storage start timing for each of the photoelectric conversion element groups in said imaging device.

3. (Currently Amended) An imaging apparatus comprising:

a taking lens for forming an image of a subject on an imaging surface;

Q² an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, composed of combinations of lines spaced at specific intervals, and which stores the charges corresponding to the image of the subject formed by said taking lens on the imaging surface;

control means for controlling the charge storage start timing for said imaging device in such a manner that the photoelectric conversion elements belonging to the same photoelectric conversion element group in said imaging device start to store charges with the same timing and the photoelectric conversion elements belonging to another photoelectric conversion element group start to store charges with different timing; and

driving means for driving said taking lens along the optical axis on the basis of the image signal read from each of the photoelectric conversion element groups in said imaging device. The imaging apparatus according to claim 1,

wherein said driving means drives not only said taking lens to specific positions in synchronization with the charge storage start timing for each of the photoelectric conversion element groups in said imaging device but also said taking lens to an in-focus position on the basis of the result of comparing the high-frequency components of the image signals read from each of said photoelectric conversion element groups.

4. (Original) The imaging apparatus according to claim 3, wherein said driving means sets any one of said specific positions as said in-focus position and driving said taking lens to the in-focus position.

5. (Currently Amended) An imaging apparatus comprising:

a taking lens for forming an image of a subject on an imaging surface;

an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, composed of combinations of lines spaced at specific intervals, and which stores the charges corresponding to the image of the subject formed by said taking lens on the imaging surface;

control means for controlling the charge storage start timing for said imaging device in such a manner that the photoelectric conversion elements belonging to the same photoelectric conversion element group in said imaging device start to store charges with the same timing and the photoelectric conversion elements belonging to another photoelectric conversion element group start to store charges with different timing; and

driving means for driving said taking lens along the optical axis on the basis of the image signal read from each of the photoelectric conversion element groups in said imaging device. ~~The imaging apparatus according to claim 1;~~

wherein said imaging device includes said photoelectric conversion elements, a vertical transfer section for transferring the charges stored in said photoelectric conversion elements vertically, a horizontal transfer section for transferring the charges from the vertical transfer section horizontally, and transfer gates provided between said photoelectric conversion elements and said vertical transfer section in such a manner that they correspond to the photoelectric conversion elements on a one-to-one basis to transfer the charges stored in said photoelectric conversion elements to said vertical transfer section, and

said transfer gates transfer the charges stored in said photoelectric conversion elements to said vertical transfer section, when transfer pulses are applied to the transfer gates at specific intervals of time over a specific time beginning at the charge storage start of said photoelectric conversion elements.

6. (Original) The imaging apparatus according to claim 5, further comprising means for changing, according to the brightness of the subject, the period during which said transfer pulses are applied.

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7. (Currently Amended) An imaging apparatus control method comprising:
the step of causing a taking lens to form an image of a subject formed by said taking lens on the imaging surface in such a manner that, in an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups having spaced lines at least partially interleaved with lines of another group, the photoelectric conversion elements belonging to the same group start to store charges with the same timing and the photoelectric conversion elements belonging to another group start to store charges with different timing; and
the step of driving said taking lens along the optical axis on the basis of the image signal read from each of said photoelectric conversion element groups.

8. (Currently Amended) An imaging apparatus control method comprising:
the step of causing a taking lens to form an image of a subject formed by said taking lens on the imaging surface in such a manner that, in an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, the photoelectric conversion elements belonging to the same group start to store charges with the same timing and the photoelectric conversion elements belonging to another group start to store charges with different timing; and
the step of driving said taking lens along the optical axis on the basis of the image signal read from each of said photoelectric conversion element groups. ~~The imaging apparatus control method according to claim 7,~~
wherein said driving step drives said taking lens to specific positions in synchronization with the charge storage start timing for each of said photoelectric conversion element groups.

9. (Currently Amended) An imaging apparatus control method comprising:
the step of causing a taking lens to form an image of a subject formed by said taking lens on the imaging surface in such a manner that, in an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, the photoelectric conversion elements belonging to the

same group start to store charges with the same timing and the photoelectric conversion elements belonging to another group start to store charges with different timing; and

the step of driving said taking lens along the optical axis on the basis of the image signal read from each of said photoelectric conversion element groups. ~~The imaging apparatus control method according to claim 7;~~

wherein said driving step drives not only said taking lens to specific positions in synchronization with the charge storage start timing for each of said photoelectric conversion element groups but also said taking lens to an in-focus position on the basis of the result of comparing the high-frequency components of the image signals read from each of said photoelectric conversion element groups after the storage.

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10. (Currently Amended) An imaging apparatus control method comprising:

the step of causing a taking lens to form an image of a subject formed by said taking lens on the imaging surface in such a manner that, in an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, the photoelectric conversion elements belonging to the same group start to store charges with the same timing and the photoelectric conversion elements belonging to another group start to store charges with different timing; and

the step of driving said taking lens along the optical axis on the basis of the image signal read from each of said photoelectric conversion element groups. ~~The imaging apparatus control method according to claim 9;~~

wherein, in said driving step, said in-focus position is any one of said specific positions.

11. (Currently Amended) An imaging apparatus control method comprising:

the step of causing a taking lens to form an image of a subject formed by said taking lens on the imaging surface in such a manner that, in an imaging device which is constructed by arranging photoelectric conversion elements in a two-dimensional array and dividing them into photoelectric conversion element groups, the photoelectric conversion elements belonging to the same group start to store charges with the same timing and the photoelectric conversion elements belonging to another group start to store charges with different timing; and

the step of driving said taking lens along the optical axis on the basis of the image signal read from each of said photoelectric conversion element groups. ~~The imaging apparatus control method according to claim 7,~~

wherein the step of storing the charges corresponding to the image of the subject formed by said taking lens on the imaging surface includes the step of storing charges in said photoelectric conversion elements,

Q₂ the step of causing transfer gates to transfer the charges stored in said photoelectric conversion elements to a vertical transfer section, when transfer pulses are applied to the transfer gates at specific intervals of time over a specific time beginning at the charge storage start of said photoelectric conversion elements,

the step of causing a vertical transfer section to transfer the transferred charges vertically to a horizontal transfer section, and

the step of transferring the charges from the vertical transfer section horizontally.

12. (Original) The imaging apparatus control method according to claim 11, wherein the step of transferring charges to said vertical transfer section changes, according to the brightness of the subject, said specific time during which said transfer pulses are applied.
